

Title (en)

POWDER DETECTOR, IMAGE FORMING APPARATUS INCLUDING SAME, AND POWDER DETECTING METHOD

Title (de)

PULVERDETEKTOR, BILDERZEUGUNGSVORRICHTUNG DAMIT UND PULVERDETEKTIONSVERFAHREN

Title (fr)

DÉTECTEUR DE POUDRE, APPAREIL DE FORMATION D'IMAGE COMPRENANT CELUI-CI ET PROCÉDÉ DE DÉTECTION DE POUDRE

Publication

**EP 3015921 A1 20160504 (EN)**

Application

**EP 15190816 A 20151021**

Priority

- JP 2014216558 A 20141023
- JP 2014216559 A 20141023

Abstract (en)

A powder detector (10;201) to detect an amount of powder in a powder container (112; 200) includes a vibration plate (201) disposed in the powder container (112; 200) to vibrate, a contact member (112c; 205) to vibrate the vibration plate (201); and a vibration detector (10) to detect a vibration state of the vibration plate (201). The powder has flowability, and the vibration state of the vibration plate (201) is affected by the powder in the powder container (112; 200).

IPC 8 full level

**G03G 15/08** (2006.01)

CPC (source: CN EP US)

**G01M 7/02** (2013.01 - US); **G01N 33/00** (2013.01 - US); **G03G 15/0858** (2013.01 - EP US); **G03G 15/086** (2013.01 - CN EP US); **G03G 15/0889** (2013.01 - CN); **G01N 33/0091** (2024.05 - US)

Citation (applicant)

JP 2013037280 A 20130221 - CANON KK

Citation (search report)

- [X] US 2013039670 A1 20130214 - HOSOYA SHINJI [JP], et al
- [X] EP 0599233 A1 19940601 - KONISHIROKU PHOTO IND [JP]
- [X] EP 1376076 A1 20040102 - NOHKEN INC [JP]

Cited by

EP3144734A1; US10031016B2

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

BA ME

DOCDB simple family (publication)

**EP 3015921 A1 20160504**; CN 105549357 A 20160504; CN 105549357 B 20200214; US 2016116860 A1 20160428; US 9523664 B2 20161220

DOCDB simple family (application)

**EP 15190816 A 20151021**; CN 201510655627 A 20151012; US 201514884961 A 20151016